

# PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2003-155578

(43)Date of publication of application : 30.05.2003

---

(51)Int.Cl.

G23G 22/34

---

(21)Application number : 2001-355007

(71)Applicant : TOYOTA MOTOR CORP  
DAIHATSU MOTOR CO LTD  
NIPPON PAINT CO LTD

(22)Date of filing : 20.11.2001

(72)Inventor : OKADA EISAKU  
YOSHIDA FUMIYA  
SHIRAISHI MASAJI  
CHIHARA YASUSHI

---

(54) CHEMICAL CONVERSION TREATMENT AGENT FOR IRON AND/OR ZINC

(57)Abstract:

**PROBLEM TO BE SOLVED:** To provide a chemical conversion treatment agent for iron and/or zinc which can be applied to the iron such as a cold rolled steel sheet and a galvanized steel sheet and the zinc, and can reduce the amount of sludge and the amounts of phosphorous, nitrogen and heavy metals which give environmental.

**SOLUTION:** The chemical conversion treatment agent for the iron and/or zinc contains zirconium iron and/or titanium ions, and fluorine ions. The contents of the titanium ions are, by weight, 20 to 500 ppm, and the molar ratio of the contents of the fluorine ions are  $\geq 6$  times of the zirconium ions and/or the titanium ions. The treatment agent does not contain phosphoric ions, and whose pH is 2 to 5.